IN THE SPECIFICATION

On page 9, the paragraph starting on line 1 and ending on line 11, is replaced as follows:

--Referring to Figure 2, the smart camera system of the present invention 50 integrates an acquisition sensor of the camera 22 or frame grabber module 24, a pipeline pre-processor 26, and an image analyzer processor 28 of the prior art into a single smart camera box 60. Required bandwidth is minimized since only detected flaws and defects of the inspection and corresponding flaw position information are communicated to the host computer 58 through ethernet outputs 64 to an ethernet hub 62. Thus, off-the-shelf ethernet cables 64 may be utilized between the smart cameras 60 of the present invention and an ethernet hub 62.--

IN THE CLAIMS

A clean version of claims 1-9 after amendment are shown below with claims 1-8 amended as follows:

1. (amended once) A web inspection system for detecting a plurality of web flaws of a web, the web inspection system comprising:

a plurality of smart cameras for generating a digital pixel representation of a portion of the web, each smart camera for detecting the plurality of web flaws from the digital pixel representation and for generating flaw image data and flaw location data;

a host computer for controlling the web inspection system and for receiving and displaying the flaw image data and the flaw location data; and

an ethernet for connecting the plurality of smart cameras to the host compute, wherein the flaw image data and the flaw location data is transmitted over the ethernet from the plurality of smart cameras to

the host computer.

2. (amended once) The web inspection system of claim 1, wherein each smart camera of the plurality of smart cameras comprises:

a line scan camera for generating the digital pixel representation of a portion of the web;

a lighting uniformity and pixel sensitivity correction means for correcting each pixel of the digital pixel representation and for providing a corrected pixel representation;

a web edge detector for detecting at least one edge of the web;

a multi-pipeline pre-processor for filtering the corrected pixel representation, the multi-pipeline preprocessor generating a prioritized data stream of potential flaws;

a run length encoder for generating location data regarding a location of each group of the potential flaws in a cross direction;

a blob detector for generating block data regarding the location of blocks of the potential flaws along a machine direction; and

an inspect/reject analyzer for determining actual flaw data from the prioritized data stream of potential flaws.

3. (amended once) The web inspection system of claim 2, wherein the multi-pipeline processor comprises:

a plurality of filters for averaging the corrected pixel representation over a distance of the web along a machine direction of the web;

a plurality of adaptive background subtraction channels connected to the plurality of filters, each adaptive background subtraction channel of the plurality of adaptive background subtraction channels producing a stream of subtracted pixel representations;

a plurality of thresholders, each thresholder of the plurality of thresholders connected to an output of an adaptive background subtraction channel of the plurality of adaptive background subtraction channels, each thresholder for grouping at least a portion of the stream of subtracted pixel representations and for producing an thresholder group output; and

a priority logic circuit for prioritizing the thresholder group output of each of the plurality of thresholders.

Cont. B1

4. (amended once) The web inspection system of claim 3, wherein the plurality of filters comprises:

a background filter;

a machine direction streak filter;

a cross direction streak filter; and

a small flaw filter.

5. (amended once) The web inspection system of claim 3, wherein the plurality of thresholders comprises:

a single pixel flaw detector;

a uniformity detector;

a machine direction streak detector;

a cross direction streak detector; and

a small flaw detector.

6. (amended once) The web inspection system of claim 1, wherein each smart camera of the plurality of smart cameras detects the plurality of web flaws from the the digital pixel representation at a contrast approaching a signal noise level.

7. (amended once) A method for low contrast web inspection of a web, the method comprising the steps of:

providing at least one smart camera for inspecting at least a portion of the web, wherein inspecting at least a portion of the web comprises the steps of;

generating flaw image data and flaw location data of the at least a portion of the web; and

transmitting the flaw image data and flaw location data over an ethernet to a host computer; and

displaying the flaw image data and flaw location data on the host computer.

Cont B1

8. (amended once) The method of claim 7, wherein the step of generating flaw image data and flaw location data comprises the steps of:

generating a pixel representation of the at least a portion of the web;

correcting the pixel representation for a lighting uniformity and a pixel sensitivity;

filtering the corrected pixel representation utilizing a plurality of filters;

grouping the filtered corrected pixel representations to generate a plurality of potential flaw data streams;

generating a prioritized data stream from the plurality of potential flaw data streams;

generating cross direction location data regarding a location of the prioritized data stream;

generating block data regarding the location of blocks of the prioritized data stream along a machine direction; and

determining actual flaw data from the prioritized data stream of potential flaws utilizing the cross direction location data and the block data.

9. A method for generating a prioritized image data stream from a digitized video stream of a web, the method comprising the steps:

averaging the digitized video stream over a distance of the web to generate an averaged background signal;

averaging the digitized video stream over a distance of the web along a machine direction of the web to generate a filtered machine direction signal ;

averaging the digitized video stream over a distance of the web along a cross direction of the web to generate a filtered cross direction signal;

subtracting the averaged background signal from the filtered machine direction signal to generate a first pixel representation;

subtracting the averaged background signal from the filtered cross direction signal to generate a second pixel representation;

grouping the first and second pixel representations to generate at least two data streams of potential flaws; and

prioritizing the at least two data streams of potential flaws to generate the prioritized image data stream.